Complete Summary

TITLE

Prenatal testing: percentage of patients who have glucose challenge test or oral glucose tolerance test performed.

SOURCE(S)

Physician Consortium for Performance Improvement, Prenatal Testing Work Group. Prenatal testing. Core physician performance measurement set. Chicago (IL): American Medical Association (AMA); 2002. 45 p.

Brief Abstract

DESCRIPTION

This measure assesses the percentage of patients screened for gestational diabetes.

RATIONALE

Prenatal testing was selected as a condition-specific measurement set because of the prevalence and incidence of pregnancy; neonatal mortality; prevalence of pregnancy-related complications; related health care costs; and the existence of established clinical recommendations for prenatal testing.

The effects of prenatal care are difficult to quantify. However, appropriate care can promote healthier pregnancies by detecting and managing maternal medical conditions that warrant intervention, identifying fetuses at risk for congenital anomalies, prematurity and still birth, and by providing health care advice to patients. Maternal medical risk factors have a major influence on pregnancy complications and infant survival. Some of the more serious conditions necessitate close medical supervision to prevent severe complications (AAP & ACOG, 2002).

Following are clinical recommendations derived from clinical practice guidelines for gestational diabetes screening:

Although universal glucose challenge screening for gestational diabetes mellitus (GDM) is the most sensitive approach, there may be pregnant women at low risk who are less likely to benefit from testing. Such low-risk women should have all the following characteristics (ACOG, 2001):

- Age younger than 25 years

- Not a member of a racial or ethnic group with high prevalence of diabetes (e.g., Hispanic, African, Native American, South or East Asian, or Pacific Islands ancestry)
- Body mass index of 25 or less
- No history of abnormal glucose tolerance
- No previous history of adverse pregnancy outcomes usually associated with GDM
- No known diabetes in first degree relative

Normal Values	Impaired Fasting Glucose or Impaired Glucose Tolerance	Diabetes Mellitus
FPG <110 mg/dL	FPG 110-125 mg/dL	FPG ≥126 mg/dL
75-g, 2-h OGTT	75-g, 2-h OGTT	75-g, 2-h OGTT
2-h PG <140 mg/dL	2-h PG 140-199 mg/dL	2-h PG >200 mg/dL
		Symptoms of diabetes and PG (without regard to time since last meal) ≥200 mg/dL

Abbreviations: FPG, fasting plasma glucose; OGTT, oral glucose tolerance test; PG, plasma glucose. The diagnosis of diabetes mellitus should be confirmed on a separate day by any of these three tests.

Data from Expert Committee on the Diagnosis and Classification of Diabetes Mellitus. Report of the Expert Committee on the Diagnosis and Classification of Diabetes Mellitus. Diab Care 2000;23(suppl):S4-S19.

There is insufficient evidence to determine the optimal antepartum testing regimen for women with GDM with relatively normal glucose levels on diet therapy and no other risk factors (ACOG, 2001).

Either the plasma or serum glucose level established by Carpenter and Coustan or the plasma level designated by the National Diabetes Data Group conversions are appropriate to use in the diagnosis of GDM (ACOG, 2001).

Other recommendations include (ACOG, 2001):

- The laboratory screening test should consist of a 50-g, 1-hour oral glucose challenge at 24-28 weeks of gestation, which may be administered without regard to the time of the last meal.

- A screening test threshold of 140 mg/dL has 10% less sensitivity than a threshold of 130 mg/dL but fewer false-positive results; either threshold is acceptable.
- The screening test generally should be performed on venous plasma or serum samples using well-calibrated and well-maintained laboratory instruments.
- Available evidence does not support recommendations for or against moderate caloric restriction in obese women with GDM. However, if caloric restriction is used, the diet should be restricted by no more than 33% of calories.
- For women with GDM and an estimated fetal weight of 4,500 g or more, cesarean delivery may be considered because it may reduce the likelihood of permanent brachial plexus injury in the infant.
- When medical nutritional therapy has not resulted in fasting glucose levels less than 95 mg/dL or 1-hour postprandial values less than 130-140 mg/dL or 2-hour postprandial values less than 120 mg/dL, insulin should be considered.

PRIMARY CLINICAL COMPONENT

Prenatal testing; gestational diabetes screening; glucose challenge test; oral glucose tolerance test

DENOMINATOR DESCRIPTION

All patients who gave birth during a 12-month period, seen for continuing prenatal care, excluding: patients seen for a consultation only or delivery of a stillborn after 28 weeks; patients with a history of overt type 1 or 2 diabetes mellitus; and patients with physician documentation that testing was not performed due to low risk for gestational diabetes

NUMERATOR DESCRIPTION

The number of patients from the denominator who were screened for gestational diabetes with a glucose challenge test or oral glucose tolerance test

Evidence Supporting the Measure

PRIMARY MEASURE DOMAIN

Process

SECONDARY MEASURE DOMAIN

Not applicable

EVIDENCE SUPPORTING THE MEASURE

A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Wide variation in quality for the performance measured

EVIDENCE SUPPORTING NEED FOR THE MEASURE

Golden WE, Wells C. Evaluating prenatal care in Arkansas. J Ark Med Soc 2002 Mar;98(9):296-7.

State of Use of the Measure

STATE OF USE

Pilot testing

CURRENT USE

Internal quality improvement

Application of Measure in its Current Use

CARE SETTING

Ambulatory Care

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Individual Clinicians

TARGET POPULATION AGE

Unspecified

TARGET POPULATION GENDER

Female (only)

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

Maternal

- More than 6 million women become pregnant annually and give birth to more than 4 million live infants each year. Although the percentage of women who begin prenatal care in the first trimester has risen by 10% in the past decade to 82.8% for 1998, the proportion of mothers with late care or no prenatal care (3.9%) has remained unchanged since 1997.
- Gestational diabetes mellitus (GDM) is the second most frequently reported complication of pregnancy, occurring in 3 to 5% of all pregnancies.

Infant

- Although the United States (U.S.) infant mortality rate has decreased steadily since 1975 (to 7.2 per 1,000 live births in 1998), the U.S. continues to rank 22nd to 25th in the International Infant Mortality Rate Index, a rate significantly behind that of other major industrialized countries.

EVIDENCE FOR INCIDENCE/PREVALENCE

Maternal mortality--United States, 1982-1996. MMWR Morb Mortal Wkly Rep 1998 Sep 4;47(34):705-7.

Murphy SL. Deaths: final data for 1998. Natl Vital Stat Rep 2000 Jul 24;48(11):1-105.

U.S. Preventive Services Task Force. Guide to clinical preventive services: report of the U.S. Preventive Services Task Force. 2nd ed. Baltimore (MD): Williams & Wilkins; 1996. 953 p.

Ventura SJ, Martin JA, Curtin SC, Mathews TJ, Park MM. Births: final data for 1998. Natl Vital Stat Rep 2000 Mar 28;48(3):1-100.

Ventura SJ, Mosher WD, Curtin SC, Abma JC, Henshaw S. Highlights of trends in pregnancies and pregnancy rates by outcome: estimates for the United States, 1976-96. Natl Vital Stat Rep 1999 Dec 15;47(29):1-9.

ASSOCIATION WITH VULNERABLE POPULATIONS

Among vulnerable populations (e.g., urban, minority), prenatal care is initiated later and there are fewer prenatal visits than among white women.

EVIDENCE FOR ASSOCIATION WITH VULNERABLE POPULATIONS

Milligan R, Wingrove BK, Richards L, Rodan M, Monroe-Lord L, Jackson V, Hatcher B, Harris C, Henderson C, Johnson AA. Perceptions about prenatal care: views of urban vulnerable groups. BMC Public Health 2002 Nov 6;2(1):25.

BURDEN OF ILLNESS

Maternal

- The United States (U.S.) maternal mortality ratio in 1998 was 7.1 per 100,000 live births and this ratio has not significantly decreased since 1982.

Infant

- The five leading causes of infant mortality in the U.S. are as follows: congenital anomalies, prematurity/low birthweight, sudden infant death syndrome, maternal pregnancy complication, and respiratory distress syndrome.
- Infants born to diabetic women are at increased risk of fetal malformation, prematurity, spontaneous abortion, macrosomia, and metabolic derangements. Gestational diabetes mellitus (GDM) is also associated with other neonatal complications such as hyperbilirubinemia and hypoglycemia. Macrosomia is associated with increased risk of operative delivery and birth trauma.

EVIDENCE FOR BURDEN OF ILLNESS

Maternal mortality--United States, 1982-1996. MMWR Morb Mortal Wkly Rep 1998 Sep 4;47(34):705-7.

Murphy SL. Deaths: final data for 1998. Natl Vital Stat Rep 2000 Jul 24;48(11):1-105.

U.S. Preventive Services Task Force. Guide to clinical preventive services: report of the U.S. Preventive Services Task Force. 2nd ed. Baltimore (MD): Williams & Wilkins; 1996. 953 p.

UTILIZATION

Low birthweight babies can require increased hospital and provider resources, including time in a neonatal intensive care unit (NICU). A severely ill newborn may spend several weeks or months in a NICU depending on the complexity of the health problem.

EVIDENCE FOR UTILIZATION

U.S. Preventive Services Task Force. Guide to clinical preventive services: report of the U.S. Preventive Services Task Force. 2nd ed. Baltimore (MD): Williams & Wilkins; 1996. 953 p.

COSTS

Birth defects can cause great human suffering, as well as high medical and nonmedical costs for special education, rehabilitation, and other services. In 1992, the estimated lifetime costs for 18 of the most clinically significant birth defects in the United States were $8 billion.

Analysis of the cost implications of low birthweight babies has revealed that:

- Low birthweight babies can require time in a neonatal intensive care unit (NICU) at a cost ranging from $1,000 to $2,500 per day.
- The lifetime medical costs for one premature baby are conservatively estimated at $500,000.
- Low birthweight accounts for 10% of all health care costs for children.
- Health care, education, and child care from birth to age 15 years for the 3.5 to 4 million infants and children born with low birthweight cost between $5.5 and $6 billion more than for children born at normal birthweight.

EVIDENCE FOR COSTS

U.S. Preventive Services Task Force. Guide to clinical preventive services: report of the U.S. Preventive Services Task Force. 2nd ed. Baltimore (MD): Williams & Wilkins; 1996. 953 p.

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

Data Collection for the Measure

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

These performance measures are designed for prospective data collection in the office-based practice only. The measurement period may begin with the date of the most recent office visit, regardless of the diagnosis at that visit, and the data collection continues until 12 months are completed.

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR (INDEX) EVENT

Clinical Condition

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions
All patients who gave birth during the reporting year

Exclusions
All patients seen for a consultation only or a delivery of a stillborn after 28 weeks; patients with a history of overt type 1 or 2 diabetes mellitus; and patients with physician documentation that testing was not performed due to low risk for gestational diabetes as documented by a physician

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions
All patients whose medical record indicates that a glucose challenge test or oral glucose tolerance test was performed

Exclusions
Unspecified

DENOMINATOR TIME WINDOW

Time window follows index event

NUMERATOR TIME WINDOW

Episode of care

DATA SOURCE

Laboratory data
Medical record

LEVEL OF DETERMINATION OF QUALITY

Individual Case

PRE-EXISTING INSTRUMENT USED

The American College of Obstetricians and Gynecologists' (ACOG) Antepartum Record

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a higher score

ALLOWANCE FOR PATIENT FACTORS

Unspecified

STANDARD OF COMPARISON

Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

A demonstration project to test the validity and reliability of measures, as well as their usefulness to practicing physicians, is under way. The Arkansas Foundation for Medical Care (AFMC) has evaluated these prenatal testing measures.

EVIDENCE FOR RELIABILITY/VALIDITY TESTING

Golden WE, Wells C. Evaluating prenatal care in Arkansas. J Ark Med Soc 2002 Mar;98(9):296-7.

Identifying Information

ORIGINAL TITLE

Screening for gestational diabetes.

MEASURE COLLECTION

The Physician Consortium for Performance Improvement Measurement Sets

MEASURE SET NAME

Physician Consortium for Performance Improvement Clinical Performance Measures: Prenatal Testing

SUBMITTER

American Medical Association on behalf of the Physician Consortium for Performance Improvement

DEVELOPER

Physician Consortium for Performance Improvement

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2002 Jan

MEASURE STATUS

This is the current release of the measure.

SOURCE(S)

Physician Consortium for Performance Improvement, Prenatal Testing Work Group. Prenatal testing. Core physician performance measurement set. Chicago (IL): American Medical Association (AMA); 2002. 45 p.

MEASURE AVAILABILITY

The individual measure, "Screening for Gestational Diabetes," is published in the "Prenatal Testing Core Physician Performance Measurement Set." A brief summary of this document is available from the American Medical Association (AMA) Division of Clinical Quality Improvement Unit Web site: www.ama-assn.org/go/quality.

For further information, please contact AMA staff by e-mail at cqi@ama-assn.org.

COMPANION DOCUMENTS

The following are available:

- Physician Consortium for Performance Improvement. Introduction to physician performance measurement sets. Tools developed by physicians for physicians. Chicago (IL): American Medical Association (AMA); 2001 Oct. 21 p. This document is available from the American Medical Association (AMA) Clinical Quality Improvement Unit Web site: www.ama-assn.org/go/quality.
- Physician Consortium for Performance Improvement. Principles for performance measurement in health care. A consensus statement. [online]. Chicago (IL): American Medical Association (AMA), Joint Commission on the Accreditation of Healthcare Organizations (JCAHO), National Committee for Quality Assurance (NCQA); [3 p]. This document is available from the AMA Clinical Quality Improvement Unit Web site: www.ama-assn.org/go/quality.
- Physician Consortium for Performance Improvement. Desirable attributes of performance measures. A consensus statement. [online]. American Medical Association (AMA), Joint Commission on Accreditation of Healthcare Organizations (JCAHO), National Committee for Quality Assurance (NCQA); 1999 Apr 19 [cited 2002 Jun 19]. [5 p]. This document is available from the

AMA Clinical Quality Improvement Unit Web site: www.ama-assn.org/go/quality.

For further information, please contact AMA staff by e-mail at cqi@ama-assn.org.

NQMC STATUS

This NQMC summary was completed by ECRI on November 25, 2002. The information was verified by the Physician Consortium for Performance Improvement on August 28, 2003.

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